

Title (en)

Turbocharger with variable nozzle having vane sealing surfaces

Title (de)

Turbolader mit verstellbaren Leitschaufeln und Dichtflächen für diese Schaufeln

Title (fr)

Turbocompresseur à géométrie variable comportant des surfaces d'étanchéité

Publication

EP 2116694 A2 20091111 (EN)

Application

EP 09158404 A 20090421

Priority

US 11524508 A 20080505

Abstract (en)

A variable nozzle for a turbocharger includes a plurality of vanes (58) rotatably mounted on a nozzle ring (40) and disposed in a nozzle flow path defined between the nozzle ring and an opposite nozzle wall. Either or both of the faces of the nozzle ring and nozzle wall include(s) at least one step (46a,46b) that defines sealing surfaces positioned to be substantially abutted by airfoil surfaces of the vanes in the closed position of the vanes and to be spaced from the airfoil surfaces in positions other than the closed position. This substantial abutment between the airfoil (58) surfaces and the sealing surfaces (46) serves to substantially prevent exhaust gas from leaking past the ends of the airfoil portions. At the same time, clearances between the nozzle ring face and the end faces of the airfoil portions can be sufficiently large to prevent binding of the vanes under all operating conditions.

IPC 8 full level

F01D 11/00 (2006.01); **F02B 39/00** (2006.01)

CPC (source: EP US)

F01D 11/00 (2013.01 - EP US); **F01D 17/165** (2013.01 - EP US); **F02C 6/12** (2013.01 - EP US); **F02C 9/22** (2013.01 - EP US); **F05D 2220/40** (2013.01 - EP US)

Cited by

EP2573363A3; EP2594745A3; EP3354862A1; US2020049163A1; US10495108B2; US11015614B2

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK TR

DOCDB simple family (publication)

EP 2116694 A2 20091111; **EP 2116694 A3 20170531**; **EP 2116694 B1 20190703**; CN 101575990 A 20091111; CN 101575990 B 20140903; US 2009272112 A1 20091105; US 8056336 B2 20111115

DOCDB simple family (application)

EP 09158404 A 20090421; CN 200910141302 A 20090504; US 11524508 A 20080505